QC ABSTRACT

NAME OF WORK: Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	.1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	KERB	Core Compressive strength	One Test		1	1
		Corrected Cylinder Compressive strength	One Test		1	1
		Equivalent Cube Compressive strength	one Test Per 400 cum		1	1
7	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
8	PCC(M15)	Compressive Strength(7days and 28days)	5 set /50-100 cum	84.86	10	10
9	RCC (M20)	Compressive Strength(7days and 28days)	4 set /31-50 cum	26.14	8	8
10	Block(400*200*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-01-29-77** **Date: 15-11-19**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	11-11-19
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	12-11-19
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.22	–
2	Finess by Air permeablity method (m^2/kg,Min)	289.5	225m^2/kg, Min
3	Density (gm/cc)	3.11	–
4	Standard Consistency (%)	27.5%	Not specified
5	Initial Setting time	170 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-01-29-77** **Date: 10-12-19**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	11-11-19
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	12-11-19
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-01-29-77** **Date: 15-11-19**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 11-11-19

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 11-11-19

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : **15000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	242	242	1.6	98.4	90-100
3	20 mm	7152	7394	49.3	50.7	30-70
4	10 mm	3885	11279	75.2	24.8	10-35
5	4.75 mm	3205	14484	96.6	3.4	0-5
6	Pan	516	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-01-29-77** **Date: 15-11-19**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**10.9**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**11.6**	
3	Specific Gravity	**2.63**	–
4	Bulk Density(Loose) (Kg/l)	**1.43**	–
5	Bulk Density(Compacted) (Kg/l)	**1.48**	–
6	Water Absorption(%)	**0.18**	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-01-29-77** **Date: 13-11-19**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Sample Condition	:	Satisfactory
Date of Receipt	:	11-11-19
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	11-11-19

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	272	272	5.4	94.6	90-100
3	10 mm	2758	3030	60.6	39.4	25-55
4	4.75 mm	1759	4789	95.8	4.2	0-10
5	Pan	211	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-01-29-77** **Date: 13-11-19**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**10.2**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**9.6**	
3	Specific Gravity	**2.63**	_
4	Bulk Density(Loose) (Kg/l)	**1.45**	_
5	Bulk Density(Compacted) (Kg/l)	**1.51**	_
6	Water Absorption(%)	**0.22**	_
7	Aggregate crushing Value(%)	**22.2**	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	**22.9**	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-01-29-77** **Date: 13-11-19**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 11-11-19

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 11-11-19

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-01-29-77** **Date: 13-11-19**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	_
2	Specific Gravity	2.59	_
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2020-01-29-77** **Date: 30-11-19**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	27-11-19
Sample Type/Size	:	Solid concrete blocks size (400X200X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	27-11-19

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	400	198	201	15919	33.353	2095.1	2038.5	Not less than 1800Kg/m^3
2	405	199	198	15958	31.660	1984.0		
3	404	201	198	16078	32.740	2036.3		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	33.91	32.25	4.89	4.25	Shall not be more than 10% by mass
2	33.57	32.14	4.28		
3	33.44	32.24	3.59		

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Lab ID : CP-2020-01-29-77 Date: 30-11-19

DIMENSION ANALYSIS

Slno	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	399	200	200	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	402	201	200	
3	402	202	200	
4	402	201	201	
5	402	201	202	
6	400	199	202	
7	404	201	200	
8	403	201	203	
9	403	202	199	
10	403	202	199	
11	400	202	200	
12	401	200	199	
13	402	201	201	
14	401	202	201	
15	399	200	203	
16	401	202	202	
17	402	200	199	
18	399	200	199	
19	399	200	199	
20	399	202	202	
Average of 20	**401**	**201**	**201**	

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Lab ID : CP-2020-01-29-77 Date: 30-11-19

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	400	200	80058	374.2	4.7	4.6
2	402	201	80841	386.7	4.8	
3	402	202	81176	379.4	4.7	
4	402	201	80628	373.2	4.6	
5	402	201	80741	359.6	4.5	
6	400	199	79861	375.7	4.7	
7	404	201	81315	376.7	4.6	
8	403	201	80863	373.8	4.6	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	Minimum average	Minimum Individual units.
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

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TEST RESULTS OF STEEL

Lab ID : **CP-2020-01-29-77** **Date: 18-11-19**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 16-11-19

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 16-11-19

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	16	1.581	572	674	19.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2020-01-29-77** **Date: 26-11-19**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	22-11-19
Sample Type /Size	:	Precast Cover Slab (100mm)
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	22/11/2019

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
I	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
II	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
III	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID	:	**CP-2020-01-29-77** **Date: 07-11-19**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	02-11-19
Sample Type /Size	:	CC Kerb Stone/ 450*165*400mm
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	02/11/2019

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	100.01	165.51	2.864	7854	142.1	18.1	18.1	22.6
2	B	100.03	165.49	2.793	7857	145.2	18.5	18.5	23.1
3	C	100.01	165.50	2.815	7854	145.1	18.5	18.5	23.1

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	CP-2020-01-29-77 **Date: 26/11/2019**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	21-11-19
Customer ID	:	Flagging Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M15 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	26/11/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	26/11/2019	149.61 X 151.29 X 151.02	22634	**8.105**	273.1	12.1	12.5
2	Flagging Concrete	M15	19/11/2019	26/11/2019	151.58 X 151.56 X 149.83	22973	**8.535**	297.3	12.9	
3	Flagging Concrete	M15	19/11/2019	26/11/2019	151.86 X 149.89 X 151.96	22761	**8.563**	281.3	12.4	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 17/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	17/12/2019	150.17 X 150.97 X 149.93	22670	**8.755**	407.6	18.0	17.7
2	Flagging Concrete	M15	19/11/2019	17/12/2019	151.05 X 151.10 X 151.40	22824	**8.438**	407.1	17.8	
3	Flagging Concrete	M15	19/11/2019	17/12/2019	150.19 X 150.31 X 149.19	22575	**8.946**	388.9	17.2	

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 26/11/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/11/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	26/11/2019	149.68 X 151.95 X 151.25	22744	**8.105**	282.5	12.4	12.5
2	Flagging Concrete	M15	19/11/2019	26/11/2019	151.25 X 151.67 X 149.48	22940	**8.535**	282.6	12.3	
3	Flagging Concrete	M15	19/11/2019	26/11/2019	151.53 X 151.57 X 150.05	22968	**8.563**	291.3	12.7	

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	CP-2020-01-29-77 **Date: 17/12/2019**
Project Name	:	Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/140/2019-20
Date of Receipt	:	21-11-19
Customer ID	:	Flagging Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M15 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	17/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	17/12/2019	150.46 X 150.00 X 150.25	22569	8.755	402.2	17.8	17.7
2	Flagging Concrete	M15	19/11/2019	17/12/2019	149.90 X 151.35 X 151.53	22686	8.438	396.9	17.5	
3	Flagging Concrete	M15	19/11/2019	17/12/2019	149.14 X 151.77 X 150.85	22635	8.946	401.5	17.7	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 26/11/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/11/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	26/11/2019	150.09 X 150.33 X 151.57	22563	**8.105**	283.2	12.6	12.6
2	Flagging Concrete	M15	19/11/2019	26/11/2019	151.04 X 150.92 X 149.85	22796	**8.535**	284.6	12.5	
3	Flagging Concrete	M15	19/11/2019	26/11/2019	150.99 X 150.46 X 149.67	22717	**8.563**	291.6	12.8	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 17/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	17/12/2019	150.93 X 150.27 X 151.86	22680	**8.755**	405.5	17.9	17.8
2	Flagging Concrete	M15	19/11/2019	17/12/2019	151.19 X 150.73 X 150.14	22788	**8.438**	401.9	17.6	
3	Flagging Concrete	M15	19/11/2019	17/12/2019	149.12 X 149.33 X 150.34	22267	**8.946**	399.4	17.9	

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ID : **CP-2020-01-29-77** **Date: 26/11/2019**

ject Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

ncy : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

tomer's Reference : BBMP/EE/BTP/140/2019-20

e of Receipt : 21-11-19

tomer ID : Flagging Concrete

mple Type /Size : 150X150X150 mm

mple grade/Age : M15 / 7 Days Compressive Strength

ference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

e of test : 26/11/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	26/11/2019	149.53 X 149.78 X 150.87	22396	**8.105**	286.4	12.8	12.6
2	Flagging Concrete	M15	19/11/2019	26/11/2019	150.11 X 151.70 X 151.10	22771	**8.535**	292.9	12.9	
3	Flagging Concrete	M15	19/11/2019	26/11/2019	151.35 X 151.86 X 151.66	22983	**8.563**	281.9	12.3	

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Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	17/12/2019	149.62 X 151.41 X 150.14	22654	**8.755**	388.7	17.2	17.1
2	Flagging Concrete	M15	19/11/2019	17/12/2019	151.81 X 150.13 X 149.05	22792	**8.438**	391.2	17.2	
3	Flagging Concrete	M15	19/11/2019	17/12/2019	151.56 X 149.95 X 149.17	22727	**8.946**	388.0	17.1	

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Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/11/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	26/11/2019	149.00 X 151.95 X 151.92	22641	**8.105**	276.2	12.2	12.5
2	Flagging Concrete	M15	19/11/2019	26/11/2019	150.35 X 149.34 X 151.80	22454	**8.535**	277.3	12.3	
3	Flagging Concrete	M15	19/11/2019	26/11/2019	149.02 X 149.38 X 149.89	22261	**8.563**	288.7	13.0	

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Quality Manager

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Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	17/12/2019	149.62 X 151.41 X 150.14	22654	**8.755**	388.7	17.2	17.1
2	Flagging Concrete	M15	19/11/2019	17/12/2019	151.81 X 150.13 X 149.05	22792	**8.438**	391.2	17.2	
3	Flagging Concrete	M15	19/11/2019	17/12/2019	151.56 X 149.95 X 149.17	22727	**8.946**	388.0	17.1	

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 26/11/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/11/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	26/11/2019	149.00 X 151.95 X 151.92	22641	**8.105**	276.2	12.2	12.5
2	Flagging Concrete	M15	19/11/2019	26/11/2019	150.35 X 149.34 X 151.80	22454	**8.535**	277.3	12.3	
3	Flagging Concrete	M15	19/11/2019	26/11/2019	149.02 X 149.38 X 149.89	22261	**8.563**	288.7	13.0	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 17/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 21-11-19

Customer ID : Flagging Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Flagging Concrete	M15	19/11/2019	17/12/2019	149.42 X 149.73 X 150.61	22373	**8.755**	389.0	17.4	17.6
2	Flagging Concrete	M15	19/11/2019	17/12/2019	151.48 X 149.82 X 150.34	22694	**8.438**	407.6	18.0	
3	Flagging Concrete	M15	19/11/2019	17/12/2019	149.17 X 150.58 X 150.68	22462	**8.946**	391.8	17.4	

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TEST REPORT OF CEMENT CONCRETE CUBES

ab ID : **CP-2020-01-29-77** **Date: 05/12/2019**

roject Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

gency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

stomer's Reference : BBMP/EE/BTP/140/2019-20

te of Receipt : 30-11-19

stomer ID : Culvert Bottom Slab Concrete

mple Type /Size : 150X150X150 mm

mple grade/Age : M20 / 7 Days Compressive Strength

eference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

te of test : 05/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Bottom Slab Concrete	M20	28/11/2019	05/12/2019	150.18 X 150.47 X 149.73	22597	**8.600**	407.3	18.0	18.1
2	Culvert Bottom Slab Concrete	M20	28/11/2019	05/12/2019	150.54 X 149.85 X 149.85	22558	**8.330**	408.4	18.1	
3	Culvert Bottom Slab Concrete	M20	28/11/2019	05/12/2019	149.86 X 151.56 X 151.12	22712	**8.754**	413.9	18.2	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2020-01-29-77 **Date: 26/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 30-11-19

Customer ID : Culvert Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Bottom Slab Concrete	M15	28/11/2019	26/12/2019	151.97 X 149.40 X 151.60	22705	**8.562**	541.8	23.9	23.4
2	Culvert Bottom Slab Concrete	M15	28/11/2019	26/12/2019	150.64 X 151.16 X 149.49	22771	**8.444**	523.4	23.0	
3	Culvert Bottom Slab Concrete	M15	28/11/2019	26/12/2019	151.87 X 149.67 X 151.83	22731	**8.767**	529.2	23.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 05/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 30-11-19

Customer ID : Culvert Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 05/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Bottom Slab Concrete	M20	28/11/2019	05/12/2019	149.50 X 151.67 X 149.31	22676	**8.600**	424.3	18.7	18.5
2	Culvert Bottom Slab Concrete	M20	28/11/2019	05/12/2019	150.89 X 151.27 X 150.33	22826	**8.330**	413.3	18.1	
3	Culvert Bottom Slab Concrete	M20	28/11/2019	05/12/2019	149.42 X 150.26 X 151.69	22453	**8.754**	419.2	18.7	

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Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 30-11-19

Customer ID : Culvert Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Bottom Slab Concrete	M15	28/11/2019	26/12/2019	150.15 X 149.91 X 151.85	22509	**8.562**	526.1	23.4	22.9
2	Culvert Bottom Slab Concrete	M15	28/11/2019	26/12/2019	151.19 X 151.60 X 150.78	22921	**8.444**	510.5	22.3	
3	Culvert Bottom Slab Concrete	M15	28/11/2019	26/12/2019	150.91 X 149.11 X 149.35	22502	**8.767**	519.2	23.1	

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Quality Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 09/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 04-12-19

Customer ID : Culvert Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 09/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Side Wall Concrete	M20	02/12/2019	09/12/2019	149.99 X 150.30 X 150.07	22544	**8.600**	410.5	18.2	18.1
2	Culvert Side Wall Concrete	M20	02/12/2019	09/12/2019	150.24 X 150.59 X 151.05	22626	**8.330**	407.7	18.0	
3	Culvert Side Wall Concrete	M20	02/12/2019	09/12/2019	150.75 X 150.23 X 151.36	22648	**8.754**	409.8	18.1	

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 30/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 04-12-19

Customer ID : Culvert Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Side Wall Concrete	M15	02/12/2019	30/12/2019	151.18 X 150.94 X 150.81	22819	8.562	536.5	23.5	23.3
2	Culvert Side Wall Concrete	M15	02/12/2019	30/12/2019	150.98 X 149.77 X 149.27	22612	8.444	511.2	22.6	
3	Culvert Side Wall Concrete	M15	02/12/2019	30/12/2019	150.12 X 151.38 X 151.59	22725	8.767	541.7	23.8	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-01-29-77** **Date: 09/12/2019**

Project Name : Improvements to Roads and Drains at Raghavendra Colony and surrounding area in Ward No.11 Kuvempunagara.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 04-12-19

Customer ID : Culvert Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 09/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Side Wall Concrete	M20	02/12/2019	09/12/2019	150.57 X 150.36 X 150.30	22641	**8.600**	408.8	18.1	18.1
2	Culvert Side Wall Concrete	M20	02/12/2019	09/12/2019	151.52 X 151.12 X 151.25	22897	**8.330**	414.7	18.1	
3	Culvert Side Wall Concrete	M20	02/12/2019	09/12/2019	149.09 X 151.76 X 149.37	22626	**8.754**	409.9	18.1	

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Lab ID : **CP-2020-01-29-77** **Date: 30/12/2019**

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Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/140/2019-20

Date of Receipt : 04-12-19

Customer ID : Culvert Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/12/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Culvert Side Wall Concrete	M15	02/12/2019	30/12/2019	149.51 X 150.39 X 149.82	22484	**8.562**	536.7	23.9	23.2
2	Culvert Side Wall Concrete	M15	02/12/2019	30/12/2019	149.40 X 151.99 X 150.48	22707	**8.444**	499.9	22.0	
3	Culvert Side Wall Concrete	M15	02/12/2019	30/12/2019	151.07 X 151.95 X 149.74	22955	**8.767**	541.7	23.6	

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